

IC-DRIVEN SYNCHRONOUS RECTIFICATION
ISOLATED FORWARD CONVERTER

FIG. 1B
PRIOR ART

SELF-DRIVEN SYNCHRONOUS RECTIFICATION
ISOLATED FORWARD CONVERTER

FIG. 1A
PRIOR ART

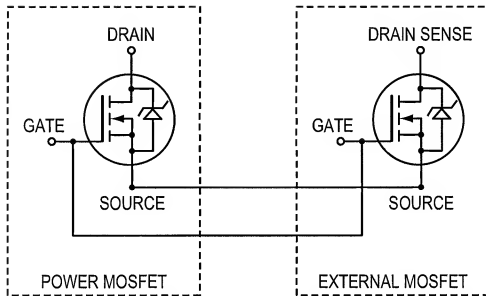


FIG. 2
PRIOR ART

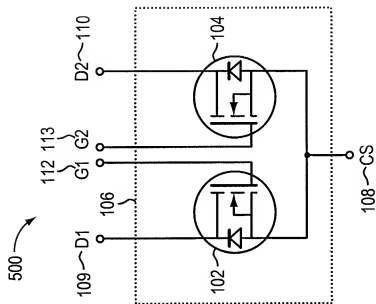


FIG. 3B

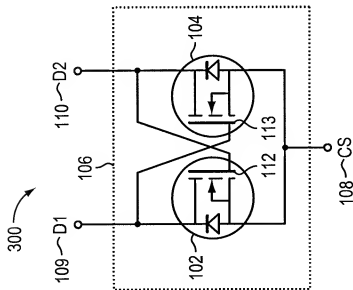


FIG. 3A

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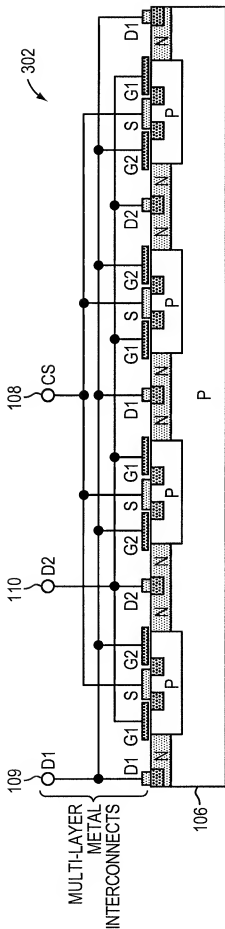


FIG. 4A

FIRST EMBODIMENT: 3-LEAD SELF-DRIVEN MOSFET PAIR IN INTERLEAVED CELL FINGERS

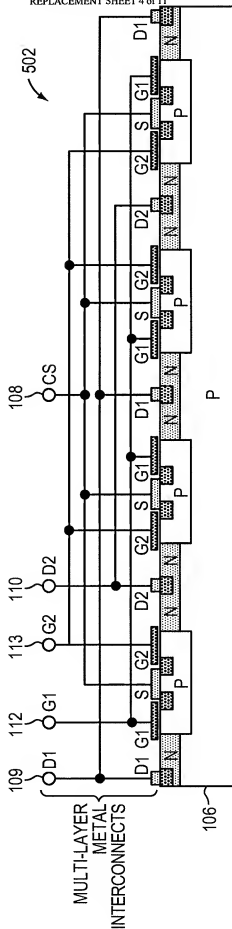


FIG. 4B

SECOND EMBODIMENT: 5-LEAD EXTERNAL-DRIVEN MOSFET PAIR IN INTERLEAVED CELL FINGERS

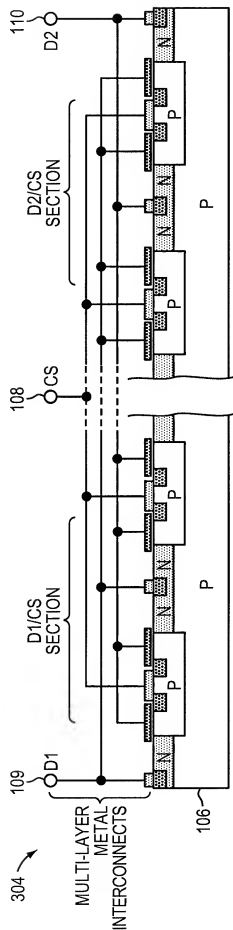


FIG. 5A

THIRD EMBODIMENT: 3-LEAD SELF-DRIVEN MOSFET PAIR IN SEPARATE CELL SECTIONS

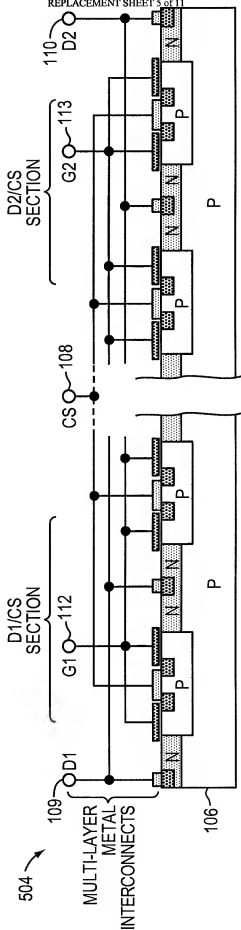


FIG. 5B

FOURTH EMBODIMENT: 5-LEAD EXTERNAL-DRIVEN MOSFET PAIR IN SEPARATE CELL SECTIONS

1. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE CONNECTION
WITH ONE OR MORE TRANSISTORS HAVING
ELECTRICALLY ISOLATED DRAIN AND GATE CONNECTIONS

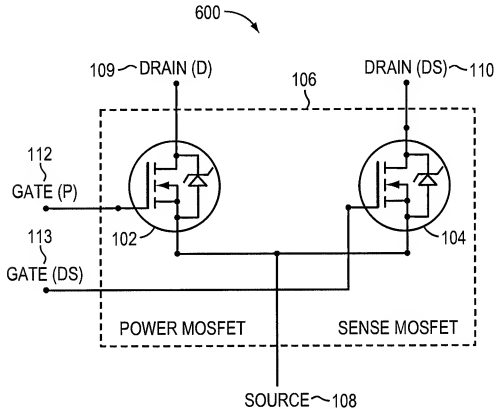


FIG. 6

[illegible]

FIG. 7
CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE

2. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE AND
GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS HAVING
ELECTRICALLY ISOLATED DRAIN CONNECTIONS

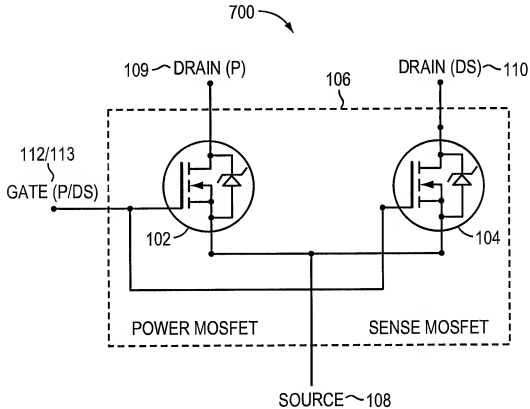


FIG. 8

2. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED OF MULTIPLE TRANSISTORS
WITH COMMON SOURCE AND GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS
HAVING ELECTRICALLY ISOLATED DRAIN CONNECTIONS

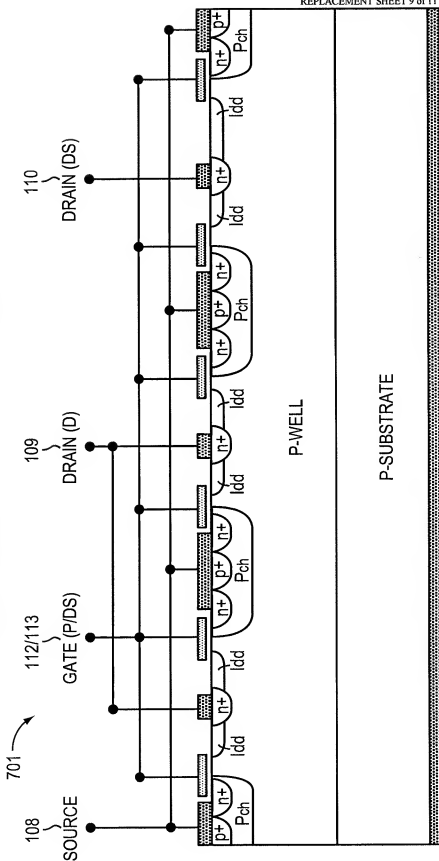


FIG. 9

CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE

3. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED
OF MULTIPLE TRANSISTORS WITH COMMON SOURCE AND
GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS HAVING
SUBSTANTIALLY DIFFERENT THRESHOLD VOLTAGES
AND ELECTRICALLY ISOLATED DRAIN CONNECTIONS

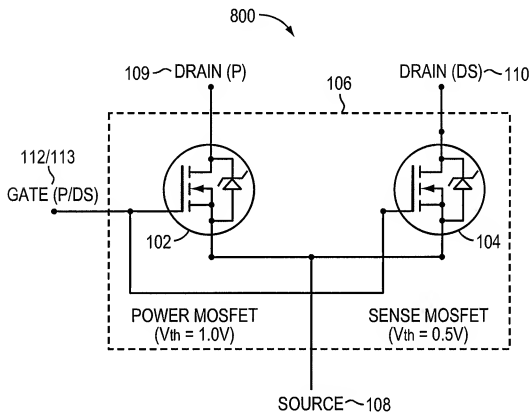
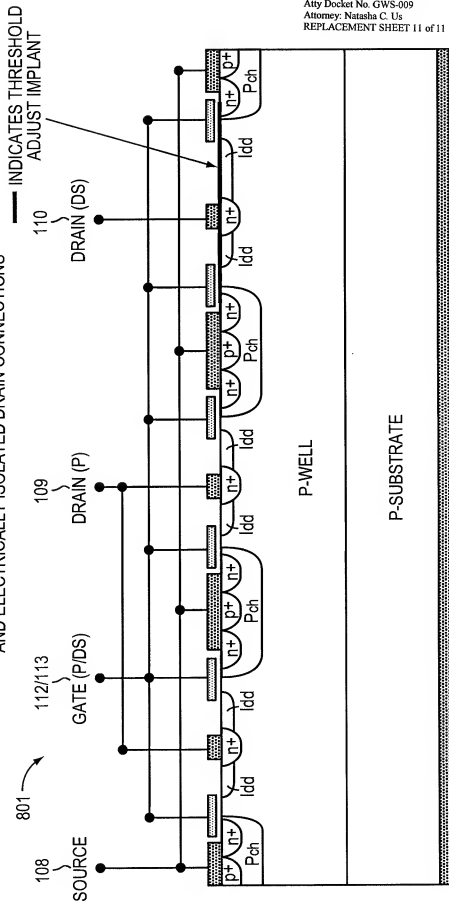


FIG. 10

3. DISCRETE POWER SEMICONDUCTOR DEVICE COMPRISED OF MULTIPLE TRANSISTORS WITH COMMON SOURCE AND GATE CONNECTIONS WITH ONE OR MORE TRANSISTORS HAVING SUBSTANTIALLY DIFFERENT THRESHOLD VOLTAGES AND ELECTRICALLY ISOLATED DRAIN CONNECTIONS



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Title: "Monolithic Power Semiconductor Structures Including Pairs of Integrated Devices" by Shen et al.
 Serial No. 10/582,035
 Atty Docket No. GWS-009
 Attorney: Natasha C. Us
 REPLACEMENT SHEET 11 of 11

FIG. 11
 CROSS-SECTIONAL DIAGRAM OF A POWER MOSFET WITH INTEGRATED DRAIN SENSE